BY ORDER OF THE COMMANDER
AIR FORCE RESERVE

AIR FORCE INSTRUCTION 11-206, 25 JULY 1994
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Flying Operations

GENERAL FLIGHT RULES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFPD 11-2, *Flight Rules and Procedures*, by prescribing general flight rules that govern the operation of Air Force aircraft flown by Air Force pilots, pilots of other services, foreign pilots, and civilian pilots. It applies to Air Force activities operating aircraft on loan or lease, to the extent stipulated in the loan or lease agreement, and to US Air Force Reserve (USAFR) units, and to Air National Guard (ANG) units when published in the NGR (AF) O-2. Address questions concerning this instruction to Headquarters Air Force Flight Standards Agency, 1535 Command Drive, Suite D-309, Andrews Air Force Base MD 20331-7002. See Attachment 1 for a list of terms and abbreviations.

NOTE: The reports in this directive are exempt from licensing according to AFI 37-124, *The Information Collections and Reports (ICR) Management Program.*

(AFRES) This supplement implements and extends the guidance of Air Force Instruction (AFI) 11-206, General Flight Rules. It applies to all AFRES units. Portions of applicable gaining major command (MAJCOM) directives in conflict with this supplement take precedence. The AFI is printed word-for-word without editorial review. Air Force Reserve supplementary material is indicated by "(AFRES)" in boldface type. This supplement describes Air Force Reserve procedures to be used in conjunction with the basic instruction. Upon receipt of this integrated supplement discard the Air Force basic.

SUMMARY OF CHANGES

This revision aligns the instruction with AFPD 11-2.

(AFRES) This revision incorporates the procedures formerly in AFR 60-16/AFRES Supplement 1, and aligns our supplement with current instructions within AFI 11-206. It mirrors the basic instruction by deleting fuel conservation procedures, and eliminates AFRES KC-135 passenger policy.

Supersedes AFR 60-16/AFRES Sup 1, 17 July 1989.
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Chapter 1

GENERAL INFORMATION

1.1. General Concepts:

1.1.1. US Air Force aircraft operate worldwide under rules and procedures that involve many standards and conflicting requirements.

1.1.2. Although the International Civil Aviation Organization (ICAO), an affiliate of the United Nations, helps to standardize and regulate international civil aviation, ICAO does not compel its members to conform to its standards and recommended practices (SARP).

1.1.2.1. Each member nation, must make known any ICAO procedure it takes an exception to and publish the alternate procedure. What that member does to modify, reject, or conform to ICAO standards constitutes that nation's rules of the air.

1.1.2.2. The Air Force supports the activities of ICAO and, military mission permitting, complies with ICAO SARPs in international airspace over the high seas.

1.1.3. Each nation prescribes the rules that apply to operating aircraft in its sovereign airspace. The Federal Aviation Administration (FAA) prescribes these rules for the United States and issues them as Federal Aviation Regulations (FAR). FARs apply to both civil and military aircraft operations unless the FAA grants the military service an exemption or the FAR specifically excludes military operations.

1.1.4. The FARs govern Air Force pilots, and nothing in this instruction relieves the pilot of the responsibility to follow them. To provide a common reference source, this instruction combines often used ICAO SARPs, FARs, and those military directives that apply to operating Air Force aircraft.

1.1.5. For specific information on the requirements of a single ICAO member that are more restrictive than the procedures outlined here, refer to the appropriate section of the flight information publication (FLIP) planning documents.

1.2. Compliance With This Instruction:

1.2.1. This instruction, as supplemented by major commands (MAJCOM), governs the operation of Air Force aircraft:

- In the United States, its territories, and possessions.
- In international airspace over the high seas.
- Over the sovereign territory of any foreign nation as modified by special notices and procedures published in FLIP. Theater commanders ensure the contents of FLIP show the rules of each nation within their area of responsibility if those rules differ from this instruction.

1.2.2. Operations of US Air Force aircraft are also governed by procedures and special notices in FLIP, the USAF Foreign Clearance Guide (FCG), Notices to Airmen (NOTAM), aircraft Dash 1, Technical Orders (T.O.), Air Force directives, MAJCOM directives, and air traffic control (ATC) instructions. (See attachment 2 for related publications.)

1.2.3. A MAJCOM may supplement this instruction by publishing restrictions that apply only to pilots or aircraft assigned or attached to that command. Send one copy of the supplement to HQ AFFSA, 1535 Command Drive Suite D-309, Andrews AFB MD 20331-7002.

1.2.4. ANG units should refer to ANGIND 2 for specific guidance concerning the applicability of this instruction and MAJCOM supplements. The National Guard Bureau performs functions for ANG units.

1.3. Deviations and Waivers. HQ AFFSA will authorize deviations from this instruction only when:

- An emergency or special circumstance exists or for the protection of lives.
- Necessary to comply with a MAJCOM training directive.
- The commander of an overseas MAJCOM believes it essential to carry out an assigned mission and the deviation complies with the air traffic rules of the assigned area.
- The waiver is essential to the defense of the United States because of a military emergency or an urgent military necessity. If circumstances require deviation from a FAR, coordinate with the FAA in advance. The Air Force Flight Standards Agency (HQ AFFSA) advises the FAA of its military intention to deviate when a lack of time does not permit such prearrangement. A MAJCOM may unilaterally authorize deviation from air traffic rules without prior FAA concurrence if it considers the deviation "essential to the defense of the United States" and there is no time to obtain approval from HQ AFFSA and the MAJCOM notifies the FAA of its military intentions.

NOTE 1: Send the MAJCOM waiver request by message to HQ AFFSA ANDREWS AFB MD//XO//.

NOTE 2: If an operation requires a deviation from a FAR, send the original and three copies of FAA Form 7711-2, **Application for Certificate of Waiver or Authorization**, through military command channels to HQ AFFSA, who forwards the form to the FAA.

NOTE 3: If a waiver is permanent, the MAJCOM will publish it in a supplement and cite the authority (for example, HQ AFFSA message, subject, and date).

NOTE 4: In the language of the Federal Aviation Act of 1958 dealing with military emergencies (49 U.S.C. 1348f), the Congress recognizes precise written guidance cannot cover all circumstances. However, Congress expects the Air Force to use its authority wisely with due regard for the interests of civil aviation and to place authority for the decision at the highest appropriate level of command.

NOTE 5: An ATC clearance is not authority to deviate from this instruction.

(AFRES) This revision incorporates the procedures formerly in AFR 60-16/AFRES Supplement 1, and aligns our supplement with current instructions within AFI 11-206. It mirrors the basic instruction by deleting fuel conservation procedures, and eliminates AFRES KC-135 passenger policy.

1.4. Reports of Deviations:

1.4.1. The pilot must verbally report deviations arising from an emergency to their immediate supervisor and commander within 24 hours of the incident. The pilot must furnish a detailed written report on request.

1.4.2. If an emergency causes the assignment of a traffic priority, the pilot must make a written record of the incident even if they did not deviate from this instruction. Upon request, the pilot sends this record to the nearest FAA regional office.

1.4.3. (Added)(AFRES) Commanders of USAFR units that receive Federal Aviation Administration (FAA) initiated reports of pilot deviations will take immediate action to conduct a preliminary investigation of the incident and document the following:

1.4.3.1. (Added)(AFRES) Factual circumstances.

1.4.3.2. (Added)(AFRES) Findings and conclusions.

1.4.3.3. (Added)(AFRES) Recommendations.

1.4.3.4. (Added)(AFRES) Actions taken to prevent recurrence.

1.4.3.5. (Added)(AFRES) Attach the FAA notification letter, flight orders, statement of crewmembers, and supporting documentation (flight plan, navigator's log, etc.) to the report.

1.4.4. (Added)(AFRES) Maintain the investigation report on file for a 1-year period, and send an information copy through Reserve channels to HQ AFRES/IGI/DOTS in turn.

1.5. Reports of Violations:

1.5.1. HQ AFFSA will process alleged pilot deviations according to AFI 13-201.

1.5.2. The FAA will conduct the initial investigation.

NOTE: The FAA may try to obtain aircrew names during the preliminary investigation, but before you release them, HQ AFFSA must give you its specific approval.

1.5.3. After receiving the formal, alleged flying deviation package from the FAA legal counsel, HQ AFFSA will forward it through each level of command to the aircrew's assigned wing.

1.5.4. The MAJCOM conducts the investigation according to the guidelines outlined in AFI 90-301.

1.5.5. Each level of command endorses the conclusion and corrective action. HQ AFFSA prepares replies to outside agencies, but does not release crew members' names.

1.6. Dimensional Unit. Except for visibility distances (statute miles (SM)), all distances referenced in this instruction are in nautical miles (NM).

1.7. Improvement Recommendations:

1.7.1. Use AF Form 847, **Recommendation for Change of Publication (Flight Publications),** according to AFI 11-215, to recommend a change to flight rules procedures.

1.7.2. Submit AF Form 847 to the wing standardization and evaluation division for evaluation. If approved, the division sends it through command channels to MAJCOM headquarters for further evaluation.

1.7.3. Return recommendations not approved by the MAJCOMs to the initiating unit with an explanation.

1.7.4. Send MAJCOM-approved recommendations to HQ AFFSA, 1535 Command Drive Suite D-309, Andrews AFB MD 20331-7002, within 45 days of receipt.

1.8. Disposition of Records. AFMAN 37-139 governs disposition of records accumulated under this instruction.

Chapter 2

PREFLIGHT REQUIREMENTS

2.1. Preflight Planning. When planning a flight, the pilot in command (or each pilot in command of an aircraft in a formation) must ensure aircrew or formation members know the appropriate procedures and have applicable information available to them for the intended operation. These include, but are not limited to:

- Appropriate sections of the T.O. or Dash 1.
- NOTAMs.
- FLIP.
- Alternatives available if the pilot cannot complete the flight as planned.
- Departure, en route, destination, and alternate weather observations and forecasts.
- Fuel requirements.
- Minimum safe altitudes for the planned route and terminal area.
- Takeoff and landing limitations.

2.2. AF Form 70, Pilot's Flight Plan and Flight Log. The AF Form 70 is the pilot's preflight and in-flight worksheet. Before takeoff, the pilot completes all column entries determined during preflight planning as necessary for safe flight. Use AF Form 70 on each flight except:

- On flights conducted within 200 NMs of the point of departure when preflight planning of control parameters (such as altitudes, headings, fuel consumption rates) would be impractical.
- When the MAJCOM directs the use of a more detailed format or when a navigator is a crew member and maintains the flight log.
- On helicopter flights conducted under visual flight rules (VFR).
- When it would delay the departure of a priority mission (as defined by the MAJCOM) to complete the form. This does not relieve the pilot of the responsibility to ensure fuel is available to complete the mission within the parameters of this instruction.

NOTE: The Miscellaneous Data section of AF Form 70 may be overprinted by a local user (when required) if the supply of forms in the original format is adequate to meet the needs of other users.

2.3. Computer-Generated Flight Plans. Unit planners must use only MAJCOM-approved and validated software designed to support mission planning for their specific aircraft.

2.4. Fuel Requirements:

2.4.1. General Information. Before takeoff or immediately after in-flight refueling, the aircraft must have enough usable fuel aboard to complete the flight:

- To a final landing, either at the destination airport or alternate airport (if one is required), plus the fuel reserve.
- To or between air refueling control points (ARCP) and then to land at the destination (or a recovery base, if refueling is not successful), plus the fuel reserve.

2.4.2. Alternate Airport. Weather conditions at the original destination govern the preflight fuel computation.

- When an alternate is required and the pilot uses the visibility-only weather criteria in paragraph 8.4.3. to determine the suitability of the original destination, total flight plan fuel must include the fuel needed for an approach and missed approach at the original destination.
- When the pilot uses the ceiling and visibility criteria in paragraph 8.4.3. to determine the suitability of the original destination, total flight plan fuel need not include the fuel required for an approach and missed approach at the original destination.

2.4.3. Computing Fuel Reserve. MAJCOMs will set fuel reserve requirements for aircraft in their commands. If the command has not established reserves, aircraft must carry enough usable fuel on each flight to increase the total planned flight time between refueling points by 10 percent

or 20 minutes, whichever is greater. To compute fuel reserves:

- For reciprocating engine-driven aircraft and helicopters, use fuel consumption rates for normal cruising altitudes.
- For turbine-powered aircraft, use fuel consumption rates that provide maximum endurance at 10,000 feet (ft.).

NOTE 1: The pilot will declare minimum fuel to the controlling agency when in the pilot's judgment the aircraft will land at the intended destination with less than the required fuel reserve.

NOTE 2: If the MAJCOM authorizes holding (instead of an alternate airport) for a remote or island destination, do not consider the prescribed holding time as part of the total planned flight time for computing fuel reserve.

2.5. Weather. Pilots must take advantage of all available weather information. Units will receive their weather support through military weather services. When military weather services are not available, gaining MAJCOMs will provide guidance on suitable alternatives.

2.5.1. Weather Information. As close to actual departure time as practical, the pilot must have enough weather information to decide what flight rules apply, whether the destination is suitable, and whether a given airport is a suitable alternate.

2.5.2. Required Documentation. The pilot must document the source of weather information and time of receipt. Document the source of weather information and time of receipt in the Weather block of the DD Form 175, **Military Flight Plan**, or in the Remarks section of another filed flight plan. DD Form 175-1, **Flight Weather Briefing**, or MAJCOM approved alternatives satisfy this requirement. DD Form 175-1 is available on request at all military installations.

Note: In other than DD Form 175, enter "WX briefed by ____ (source), at ____. (time)"

2.5.3. Weather Updates. The pilot must get weather updates by the best means available. In all cases, the update should be far enough in advance so the pilot can change the planned flight.

2.5.4. Alternative Method. If weather information is not available, pilots may fly under VFR to the nearest point where information is available for the IFR part of the flight.

2.6. NOTAMs. As close as practical to actual departure time, pilots must obtain the most current NOTAMs for the departure and enroute phases, destination, and alternates when required. The most current NOTAMs are maintained in the FAA/DoD integrated NOTAM System. When filing in-flight the pilot obtains NOTAMs from any appropriate facility.

2.6.1. Required Documentation. Document receipt of NOTAMs by initialing NOTAM block on the DD Form 175, **Military Flight Plan,** or by signing the Pilot in command block on the DD Form 1801, **DoD International Flight Plan.**

NOTE: MAJCOMs will determine documentation procedures for MAJCOM approved forms or when flight plans are not filed through base operations.

2.7. Briefings. The pilot in command (or the formation flight leader) is responsible for the safe and orderly conduct of the flight. The pilot must ensure each crew member and passenger is briefed on items that affect safety or mission completion. On passenger-carrying aircraft, the operating command must supplement verbal briefings with printed information guides for passenger use according to the flight manual. Passenger briefings should include, but need not be limited to:

- Emergency procedures.
- Life support systems and equipment information.
- Precautions and restrictions.
- Special procedures and instruction for use during training, formation, or operational missions.
- Prohibitions listed in paragraph 2.8.

2.8. Prohibitions. The following prohibitions apply to each passenger and crew member aboard an Air Force aircraft:

2.8.1. Electronic Devices:

2.8.1.1. Do not use non-transmitting portable electronic devices during takeoff and landing (below 10,000 ft.), or whenever directed by a crew member. You may use this equipment at other times (above 10,000 ft.), provided the pilot and crew are aware you are operating this equipment. If the crew suspects interference from a portable electronic device, it may prohibit you from operating the device. Here are some devices you may use *(**NOTE**: this list is not all-inclusive):*

- Audio and video recorders and playback devices.
- Computers, peripherals, and electronic entertainment devices.

- Radio receivers.

2.8.1.2. If you must operate non-transmitting portable equipment during all phases of flight due to mission requirements, it must meet the requirements of MIL-STD-461D, or methods RE102 and CE102, when tested according to MIL-STD-462D. You must ensure the pilot and crew are aware you are operating the equipment.

2.8.1.3. Paragraph 2.8.1.1 and paragraph 2.8.1.2 do not apply to:

- Hearing aids.
- Heart Pacemakers.
- Electronic watches, hand held non-printing calculators, portable voice recorders.
- Properly certified operator equipment.

NOTE: Technical guidance and data evaluation is available from ASC/ENAI, 2450 D. St Ste 2 WPAFB OH 45433-7630, DSN 785-5078.

2.8.2. No person may carry materials classified as explosive, flammable, or corrosive or materials with toxic or irritating fumes unless approved by a competent authority. (See AFI 24-204 for information covering restrictions and packaging.)

2.8.3. No person may carry narcotics, marijuana, or other dangerous drugs unless approved by a competent authority.

2.8.4. MAJCOMs will provide guidance on the wearing of wigs, hair pieces, ornaments, barrettes, pins, clips, other hair fasteners, or earrings in the aircraft or on the flight line. MAJCOMs must develop procedures to ensure crew members and passengers wearing these items do not create a foreign object damage (FOD) hazard.

2.9. Equipment Required for Flight:

2.9.1. General Information. Each aircraft must have instrumentation that allows the pilot to assess engine performance, aircraft altitude, attitude, speed, and heading as well as equipment that provides two-way air-to-ground communications. Aircraft approved for IFR operations must have at least two independent attitude instruments that are in working order prior to flight and must comply with paragraphs 2.9.2. through 2.9.4. below. In a tandem-configured cockpit, the instruments must work in the cockpit the pilot in command occupies. In most controlled airspace, the required instrumentation must include an operable transponder. Aircrews should consult FLIP General Planning for transponder requirements in the US, and they should consult FLIP Area Planning and supplements for transponder requirements overseas.

2.9.2. The Laws of Flight Instrumentation. Electronic displays allow the pilot to optimize cockpit instrumentation for a particular mission by decluttering, removing, or relocating presentations. Display options vary widely from aircraft to aircraft and incorporate different symbologies and terminology for similar functions. In some cases the pilot may be able to configure the cockpit to omit elements necessary for basic attitude awareness and aircraft control. Regardless of the type of aircraft, mission, or mission phase, attitude awareness is a full-time Air Force mission requirement. Persons charged with cockpit instrumentation design, layout, and capability; pilots or other crew members who can modify the cockpit display configuration; and implementing directives (for example, Dash 1's, T.O.'s, AFI 36-series manuals and handbooks, etc.) must adhere to the following:

2.9.2.1. The Supreme Law. You must always have primary flight instrumentation present. It must provide full-time attitude, altitude, and airspeed information; an immediately discernible attitude recognition capability; an unusual attitude recovery capability; and complete fault indications.

2.9.2.2. The Law of Order. You must position and arrange the elements of information that support the Supreme Law in a manner that enables the pilot to perform a natural crosscheck.

2.9.2.3. The Law of Standards. You must standardize the elements that support the Supreme Law in terminology, symbology, mechanization, and arrangement.

2.9.2.4. Single Medium Display. For a head-up (HUD) or head-down (HDD) multifunction display to satisfy flight instrumentation requirements as a single medium display, it must adhere to the Supreme Law and Law of Order and always display:

- Climb/dive angle (or pitch and vertical velocity).
- Bank angle.
- Barometric altitude.
- Indicated or calibrated airspeed.
- Prominent horizon reference.
- Complete fault indications.

NOTE: HQ AFFSA/XO is the final approval authority over which single medium displays meet the requirements for a primary flight reference.

2.9.3. Instrument Flight Rules (IFR). For flights that operate under IFR, the aircraft must have navigation

equipment compatible with the facilities used for the airspace where the operations occur.

2.9.4. Instrument Meteorological Conditions (IMC). Flights conducted in IMC also require:

- Operative pitot heat.
- Operational anti-icing or de-icing (in aircraft equipped with anti-icing and de-icing equipment, both must be operational) equipment designed to cope with the type and severity of known or forecast icing conditions, and ensure safe operation of the aircraft, except for brief exposures when climbing or descending to an operating altitude above or below the icing condition.

2.9.5. Night Flight. In addition to paragraph 2.9.1. above, a pilot must not operate an aircraft at night unless it is equipped with operative cockpit instrument lights, aircraft position lights, at least one anti-collision or strobe light, and one operative landing light. If the anti-collision light fails, the aircraft should proceed to a stop where repairs can be made without undue delay. Each crew member must carry an operable flashlight.

NOTE: Helicopters equipped with search lights that provide enough light for landing must have either an operational landing light or a search light.

2.10. Safeguarding Classified Equipment.

2.10.1. Commanders must take necessary security steps to protect classified equipment on aircraft at installations under their jurisdiction.

2.10.2. Commanders of transient aircraft make their own security arrangements when they are at non-Air Force installations.

Chapter 3

FLIGHT PLANS AND PROCEDURES

3.1. Flight Plan Requirement. A flight plan is mandatory for all flights in Air Force aircraft.

3.2. Use of Flight Plans. The FLIP planning documents list the types of flight plans and their areas of application.

3.2.1. Pilots may use a MAJCOM-approved form instead of DD Form 175 or DD Form 1801, DoD International Flight Plan, for a local area flight (IFR or VFR) that ends at either the base of departure or at an installation under the operational control of the base of departure.

3.2.2. For an IFR flight, pilots may use a MAJCOM-approved form (established according to AFI 37-160, volume 8 (formerly AFR 9-1)) that meets the minimum flight plan information requirements for IFR flight and whose format is acceptable to the air route traffic control center (ARTCC).

3.2.3. When the written flight plan (DD Form 175, DD Form 1801, or MAJCOM-approved form established according to AFI 37-160, volume 8) is not processed through base operations, the flying unit must have a written agreement with the local chief of airfield management outlining the procedures for handling flight movement messages and identifying the agency responsible for flight following.

3.3. Completing Flight Plans. Complete DD Forms 175 or 1801 according to the examples and instructions in FLIP General Planning. When a MAJCOM prescribes a substitute form for DD Form 175 or 1801, complete the substitute form as directed by the prescribing authority. In addition:

- Use the reverse side of the flight plan form to meet local requirements.
- List passengers on DD Form 2131, **Passenger Manifest**, or as directed by the MAJCOM.
- If the crew or passenger list is not filed with the flight plan, add the location of the crew or passenger list in the space provided beside the crew and passenger entry on the flight plan.
- If there are unscheduled changes in the crew or passenger list, send the changes to the facility that processed the original manifest or flight plan, or leave the changes with a responsible person at the location where the change is made. Notify the nearest flight service station (FSS), or its equivalent, of the name of the person or agency where the revised list is being held.

3.3. (AFRES) Air Reserve Technicians (ART) flight crew personnel will use their military grade when

completing the crew list portion of the DD Form 175 or the substitute gaining MAJCOM approved form.

3.4. Stopover Flights. The pilot in command or aircraft commander:

- Before departure, plans the entire flight to its final destination in the greatest detail possible and completes the proper parts of AF Form 70 (or the MAJCOM-approved form established according to AFI 37-160, volume 8) for each leg of the flight.
- Before departing each intermediate stop, obtains the latest weather and NOTAM information available for the intended route of flight.
- As soon as practical after takeoff from any civil airport, notifies the nearest FSS (or its equivalent in an overseas area) of the departure time.
- Under ICAO rules, may not be able to list intermediate stops on international flight plans. The authority to make intermediate stops in an overseas area or foreign air defense identification zone (ADIZ) depends on the concurrence of the agency that controls the airspace. Therefore, the pilot does not show intermediate stops on the DD Form 1801 unless allowed by a written agreement with the proper air traffic and airspace authorities. This written agreement must define the procedures for handling flight movement messages and identify the agencies responsible for flight following and search and rescue.

3.5. Procedures for Flight Plan Filing (Departure, En Route, and Arrival). These procedures, located in FLIP, govern operations of all flights in Air Force aircraft.

3.6. Flight Plan Changes. A pilot may make changes to a route or destination not shown on the original flight plan without refiling provided:

- The change does not penetrate an ADIZ.
- The controlling ATC agency approves the change for an IFR flight.
- The pilot or controlling ATC agency notifies the facility providing flight following of the change. Failure to ensure a FSS (or its equivalent in an overseas area) is aware of the change may result in erroneous search and rescue service, or an unannounced arrival at the destination base.
- The change complies with applicable national rules in an overseas area.

NOTE: When filing a flight plan in flight, use the format in the FLIP en route supplements.

3.7. Departing a Nonmilitary Installation. When departing a nonmilitary installation, the pilot must follow the instructions in the FLIP planning documents. If communications are not available, the pilot must:

- Leave a description of the intended flight plan and a list of passengers and crew members with a responsible person at the point of departure, if practical, and inform the FSS of the crew or passenger list location when filing the flight plan.
- Fly under VFR to the nearest point where the pilot can file a flight plan by radio with any FSS (or its equivalent), ARTCC, or military facility.
- Remain clear of any ADIZ.
- Request the flight plan and actual departure time be relayed to the facility providing flight service.

3.8. Closing the Flight Plan. When a pilot in command has activated a flight plan, that pilot , upon canceling or completing the flight plan, shall notify an FSS or ATC facility by any means of communication available. The pilot can use long distance telephone service (collect if necessary).

Chapter 4

FLIGHT AUTHORIZATION, APPROVAL, AND CLEARANCE AUTHORITY

4.1. Flight Authorization. Pilots may not fly Air Force aircraft unless the commander who has operational control over the aircraft releases the aircraft to the designated pilot in command according to AFI 11-401. The commander may only release the aircraft to a qualified pilot in

command (or formation flight leader) who is current in the aircraft.

4.1.1. The commander must ensure flight authorizations comply with AFI 11-401, regardless of the parent service of the pilot in command.

4.1.2. The pilot in command of a non-Air Force aircraft authorizes use of that aircraft in flight.

4.1.3. If the military need is urgent, the commander may authorize the use of transient aircraft by other than the originally designated pilot in command, and the commander may permit aircraft to be flown with less than the minimum crew prescribed in the aircraft T.O.

4.2. Approval Authority:

4.2.1. Normally, the individual who assumes responsibility for the aircraft is the approval authority for a flight. Unless approval authority is specifically withheld by the individual's flying unit commander, the following persons have this authority:

- Pilots who have an instrument rating (or its equivalent) for their own flight and flights of other aircraft in a formation they command. Army and Navy special and instrument ratings and FAA instrument or airline transport ratings meet this requirement.
- Air Force flying unit commanders for flights from installations under their operational control by pilots or student pilots who do not have their own approval authority.

4.2.2. The unit commander having operational control over the aircraft must approve flights to or from other than established landing surfaces (pastures, highways, etc.) by fixed-wing aircraft. The commander must thoroughly evaluate all factors before approving the flight.

4.2.3. A signature by the pilot in command on the flight plan is evidence of approval and means:

- The flight was properly ordered and released.
- Adequate flight planning data was available.
- The pilot will the flight according to governing directives.
- The pilot has reviewed the flight plan for completeness and accuracy.
- Foreign clearance briefings have met the minimum requirements of the FCG.
- The pilot has briefed each member of the formation flight on all pertinent aspects of the planned flight, and the pilot in command of each aircraft in the formation possesses an instrument rating if any portion of the flight is to be conducted under IFR.
- The pilot is aware of the responsibility for safety of the aircraft (or formation of aircraft) and its occupants.
- The flight complies with special-use airspace scheduling and coordination procedures specified in FLIP AP/1B.

4.3. Additional Approval and Requirements:

4.3.1. When departing for destinations outside the Continental United States (CONUS), all aircraft must proceed through designated foreign clearance bases as identified in FLIP and the FCG.

4.3.2. When operating from non-Air Force installations, pilots must file and clear according to this instruction and FLIP.

4.3.3. MAJCOMs may prescribe which Air Force aircraft can file to or land at CONUS civil (P) airports. In absence of MAJCOM guidance pilots must not file to or land Air Force aircraft (other than C-designated aircraft) at CONUS civil (P) airports except:

- In an emergency.
- When necessary in the recovery of active air defense interceptor aircraft.
- When this instruction requires an alternate airport and no suitable military airport is available.
- When the wing commander or higher authority approves the flight and the airport manager grants permission in advance.
- When FLIP classifies the airport of intended landing as a joint-use field (for example, ANG and civil) and airport facilities or ground support equipment can support the aircraft concerned.

4.3.4. Pilots may conduct instrument approach training at civil facilities only with the approval of the local ATC

facility (tower or approach control). Volume training requires concurrence of the civil airport authorities before use.

4.3.5. Pilots must not operate aircraft in designated special-use airspace or ADIZ contrary to the restrictions published for these areas without the permission of the controlling agency. ***NOTE:*** See FLIP and NOTAMs for information concerning special-use airspace and ADIZ.

4.3.6. (Added)(AFRES) Authority for approval of one-time flights for AFRES aircraft is the responsibility of the numbered air force (NAF) commander. This authority may be delegated in writing to wing commanders and ART squadron commanders in rescue units. Commanders authorizing such flights will notify the respective NAF and HQ AFRES/LGM of the factual circumstances. (Criteria and procedures relevant to certification of airworthiness and release of the aircraft for one-time flights are contained in TOs 00-20-1/5.) AFRES aircrews under operational control of their gaining command will comply with waiver requirements in their appropriate MAJCOM directives.

4.4. Clearance Authority. To ensure the safe and orderly flow of air traffic, ATC must properly clear each flight for its intended operation.

4.4.1. If a pilot intends to fly in controlled airspace according to IFR, obtain an ATC clearance before departure. In uncontrolled airspace, the pilot is the clearance authority.

4.4.2. Flights conducted entirely under VFR rely on the "see and avoid" concept. Since pilots are responsible for their own separation from other aircraft, the pilot's signature on the flight plan is sufficient to clear the flight.

4.4.3. Helicopter flights conducted under special VFR require a clearance from the local ATC agency (tower or approach control).

4.5. Complying With ATC Instructions:

4.5.1. Each pilot must comply with all ATC instructions unless an emergency or safety consideration makes compliance impractical. In such cases, the pilot must:

- Request an amended clearance or, lacking enough time, notify the controlling agency (in advance) of the action contemplated.
- When time does not permit, notify the controlling agency as soon as possible of action taken.
- Change the flight plan.

NOTE: If a deviation from the prescribed clearance requires traffic priority, report the circumstances according to paragraph 1.4.2.

4.5.2. To prevent the controller from misidentifying an aircraft in a radar environment, a pilot must not follow ATC's clearance or instructions meant for the pilot of another aircraft.

4.6. Complying With International Procedures. The FCG is the basic source of information for guidance on national and foreign rights, foreign clearance authority, and foreign clearance bases and for procedures on clearing and controlling international air operations. Pilots must also read chapter 6 in FLIP GP and the applicable sections of FLIP Area Planning for the intended route of flight. MAJCOMs must establish procedures to ensure crew members comply with FCG requirements. The pilot in command must ensure compliance with the procedures of this paragraph. These procedures require crew members to:

- Use appropriate airports of entry or departure for aircraft entering from or departing for foreign territory. ***NOTE:*** If practicable, you should enter the US through an airport of entry (AOE) or landing rights airport (LRA) as defined in the FCG.
- Receive a briefing on customs rules before international flights, especially on the prohibition of drugs and the penalties for smuggling drugs.
- Expand preflight and postflight aircraft checks on all flights with a destination other than the country of departure. These checks should include likely areas aboard the aircraft where drugs may be concealed and the manifest of all personnel and cargo.
- Immediately report any suspected customs deviations to the proper authorities.

4.6.1. (Added)(AFRES) AFRES aircrew under operational control of their gaining command when departing the CONUS will comply with the gaining command directives relative to foreign clearance. Aircrews under operational control of AFRES will comply with the following procedures:

4.6.1.1. (Added)(AFRES) Exit and entry points into the United States are through regular foreign clearance bases only. EXCEPTION: When in the interest of economy and mission effectiveness, AFRES may approve CONUS departures from other than foreign clearance base according to FCG, chapter 5, section I.

Request will be included in the unit's foreign flight request and forwarded according to AFRESI 11-201, paragraph 5.10.4.

4.6.1.2. (Added)(AFRES) Unit commanders are authorized to perform checks of aircraft and aircrew baggage on aircraft returning from international flights in addition to the check that may have been accomplished at the airport of entry.

4.6.1.3. (Added)(AFRES) Immediately report suspected custom irregularities to the aircraft commander who relays all known information by the most expedient means to the local base commander or civilian authorities, as applicable. Make an immediate call to relay the information to the AFRES Command Center (HQ AFRES/DOOC) (DSN 468-3304, Commercial (912) 926-3304, or 1-800-223-1784).

Chapter 5

GENERAL FLIGHT RULES

5.1. Operational Standards. Pilots must not operate Air Force aircraft in a careless or reckless manner or endanger life or property.

5.1.1. A person must not act as a crew member of an aircraft:

- While under the influence of alcohol or its aftereffects. Additionally, no person may consume alcoholic beverages during a 12-hour period prior to takeoff or while flying as a crew member.
- While under the influence of or using a drug that affects the ability to safely perform assigned duties. Aircrews will not self-medicate. ***NOTE:*** Reference AFI 48-123 for medications that pilots may use without consultation with a flight surgeon.
- If physical condition is suspect or known to be detrimental to safety.

5.1.2. Any person who is obviously under the influence of intoxicants or narcotics must not board an Air Force aircraft except:

- In an emergency.
- When in patient status under proper care or when exceptional circumstances exist and no compromise of safety is anticipated.

5.1.3. Crew members must occupy their assigned duty stations from takeoff to landing, unless absence is normal in the performance of crew duties.

5.2. See and Avoid. When weather conditions permit, regardless of whether an operation is under IFR or VFR, use the "see and avoid" concept.

5.3. Proximity of Aircraft. Pilots must not fly an aircraft so close to another that it creates a collision hazard. Use 500 ft. of separation (well clear) as an approximate guide except for:

- Authorized formation flights.
- Command-approved maneuvers in which each participant is fully aware of the nature of the maneuver and qualified to conduct it safely (for example, interceptor attack training).

NOTE: If an emergency requires visual checks of an aircraft in distress, the pilot must exercise extreme care to ensure this action does not increase the overall hazard (see paragraph 1.3.). The pilot must carefully consider the capabilities of the distressed aircraft and the intentions of the crews involved before operating near another aircraft in flight.

5.4. Formation Flight:

5.4.1. Nonstandard Formation Flight. Pilots may conduct nonstandard formation flights as specified in attachment 1 or when operating under VFR.

5.4.2. Transponder Operations During Formation Flight. Unless otherwise specified in Allied Communications Publication 160, US Supplement 1:

- During a standard formation flight, one aircraft (normally the lead) squawks the proper code while all others squawk standby.
- All aircraft within a nonstandard formation flight will squawk the ATC-assigned Mode 3A/C beacon code until established within the assigned altitude block and closed to the proper en route interval. Unless otherwise directed by ATC, when aircraft interval exceeds 3 NMs, both the formation leader and the last aircraft will squawk the assigned Mode 3A/C beacon code.

- During refueling, when the receiver formation is within 3 NMs of the tanker aircraft, the receiver formation squawks standby unless the T.O. specifies different distances.

5.5. Right-of-Way Rules. Usually, right-of-way is given to the aircraft least able to maneuver, which normally permits that aircraft to maintain course and speed. However, visibility permitting, each pilot must take whatever action is necessary to avoid collision, regardless of who has the right-of-way. When another aircraft has the right-of-way, the yielding aircraft must not pass over, under, abeam, or ahead of the other aircraft until well clear.

5.5.1. Distress. Aircraft in distress have the right-of-way over all other air traffic.

5.5.2. Converging. When converging at approximately the same altitude (except head-on or approximately so), the aircraft to the other's right has the right-of-way. Aircraft of different categories have the right-of-way in the following order of priority:

- Balloons.
- Gliders.
- Aircraft towing or refueling other aircraft.
- Airships.
- Rotary or fixed-wing aircraft.

5.5.3. Approaching Head-On. If aircraft are approaching each other head-on or approximately so, each alters its course to the right.

5.5.4. Overtaking Aircraft. An overtaken aircraft has the right-of-way. The overtaking aircraft must alter its course to the right.

5.5.5. Landing. An aircraft established on final approach has the right-of-way over other aircraft on the ground or in the air, except when two or more aircraft are approaching to land. In this case, the aircraft at the lower altitude has the right-of-way if it does not use this advantage to cut in front of or overtake the other.

5.5.6. Water Operations. Rules for operating aircraft on or from the surface of water conform to marine rules for operating vessels. Right-of-way rules in paragraph 5.5.3., paragraph 5.5.4., and paragraph 5.5.5. above apply equally to water operation without regard to the category of the aircraft. If possible, aircraft operating on the surface of the water should keep clear of all vessels and not impede their navigation.

5.6. Communication in Flight:

5.6.1. Pilots should establish and maintain two-way radio communications with the proper ATC facility or FSS if possible.

5.6.2. Aircraft commanders are responsible for ensuring emergency frequencies are monitored by a crew member at all times.

5.6.3. If radio communications fail in flight, the control tower will use ATC light signals to control radio-out aircraft approaching the airport for landing (see the Flight Information Handbook).

5.7. Aircraft Speed. The pilot will:

5.7.1. Not operate at or above Mach l except as specified in AFI 13-201, *US Air Force Airspace Management.* Complete AF Form 121, **Sonic Boom Log**, for each supersonic sortie according to AFR 13-201.

5.7.2. Not exceed 250 knots indicated airspeed (KIAS) below 10,000 ft. mean sea level (MSL) when operating in US sovereign airspace, unless the MAJCOM has approved a higher speed according to the FAR 91.117(a) exemption. (See attachment 2 for Air Force aircraft speed authorizations.) Be aware that this is a maximum speed unless established in a military operations area (MOA), restricted area, approved military training route (MTR), or during coordinated exercises or special missions.

5.7.3. Not exceed 250 KIAS below 10,000 ft. MSL when operating outside US sovereign airspace unless:

- Mission requirements dictate speeds exceeding 250 KIAS and operations are in international airspace.
- ICAO or host nation rules permit aircraft speeds over 250 KIAS.
- Necessary to maintain the minimum safe airspeed as specified in the aircraft T.O. or DASH 1.
- Required by ATC and permitted by host nation rules.

5.7.4. Not exceed 200 KIAS at or below 2,500 ft. above the surface within 4 NMs of the primary airport of a Class C or Class D airspace area unless authorized or required by ATC, or required to maintain the minimum safe maneuvering airspeed specified in the aircraft T.O. or DASH 1.

5.7.5. Maintain a speed of 200 KIAS or less in the airspace underlying a Class B airspace area designated for an airport or in a VFR corridor designated through a Class B airspace area, unless required to maintain the minimum safe

maneuvering airspeed specified in the aircraft T.O. or DASH 1.

5.7.6. Conduct holding at airspeeds prescribed in FLIP General Planning, Chapter 5.

5.8. Area Navigation (RNAV). MAJCOMs may approve the use of RNAV systems for enroute operations that meet the accuracy tolerances in FAA Advisory Circular 90-45A. The MAJCOM will notify HQ AFFSA of the type of aircraft and system approved for RNAV.

5.9. Landing Area Rules:

5.9.1. Takeoff and Landing. If the airport has an operating control tower:

- The pilot must receive clearance from ATC before taxiing, takeoff, or landing.
- The control tower normally determines takeoff and landing direction (see AFI 13-203). When a no-wind condition exists, the pilot may request the runway favored by shorter taxi distances (or other local considerations). When no tower is available, the pilot may take off or land on the runway most nearly aligned into the wind.
- Unless the tower gives specific restrictions, a clearance to taxi to a specific runway means the pilot may taxi the aircraft across all other runways and taxiways, but must not taxi it across or on the assigned runway.
- After landing, the pilot must not use a runway to taxi unless specific clearance is received.

NOTE: This does not prevent aircraft rollout to the end of the landing runway.

5.9.2. Turns After Takeoff, Low Approaches, or Closed Patterns. Pilots must not turn aircraft after a takeoff, touch and go, or low approach until at least 400 ft. above ground level (AGL), at a safe airspeed, and past the departure end of the runway (if visible) unless:

- Specifically cleared by the controlling agency.
- Safety dictates otherwise.
- Required by local procedures.

NOTE: The 400-ft. AGL restriction does not apply to closed patterns.

5.9.3. Traffic Pattern Procedures. Pilots must:

- At Air Force installations, fly the traffic pattern prescribed in AFPD 13-2 or published in FLIP, unless otherwise directed.
- At other than Air Force installations, fly traffic patterns as directed by the control tower or published in FLIP, FAR's, or AIM.
- At airports with no control tower, follow the standard light signals or visual indicators that prescribe the direction of traffic and landing runway. Departures must comply with the appropriate route for the airports. (See "Visual Indicators at Uncontrolled Airports" in the Airman's Information Manual for detailed description).
- When flying helicopters, avoid the flow of fixed-wing aircraft. Helicopters that have a compatible airspeed may fly in the rectangular pattern.

5.9.4. Helicopter Landing Areas. Helicopters may operate from other than established landing areas (fields, highways, parks, etc.) if:

- A military requirement exists and the user receives permission to use the area for landing, safeguards exist to permit operations without hazard to persons or property, and no legal objections are apparent.
- The pilot uses a helicopter in rescue operations.

5.9.5. Night Operations. A pilot must not conduct flight operations between the hours of official sunset and official sunrise unless the runway is outlined with lights and clearly discernible. In Alaska and other areas located north of 60 latitude, the pilot may operate the aircraft to unlighted airports during the period of civil twilight. Use the latest version of the Air Almanac or computer program "LIGHT PC" to determine or calculate light and moon data.

NOTE: MAJCOMs set illumination requirements for helicopter landing areas not already established in other directives.

5.9.6. Landing Gear Reporting Procedures. Pilots must report "gear down" to the ATC agency or runway supervisory unit after extending the landing gear. They must make this report before crossing the runway threshold. This is mandatory for any approach to an airport. Pilots flying aircraft with fixed landing gear do not have to make a "gear down" report.

5.10. Altitude Requirements. Except for takeoff or landing, pilots must not operate aircraft:

5.10.1. Below a safe altitude, except when making an emergency landing (for example, an engine failure or other mechanical malfunction) without undue hazard to persons or property on the surface.

5.10.2. Under VFR above 3,000 ft. AGL at altitudes or flight levels other than those specified in FLIP, except while turning or holding in a holding pattern of 2 minutes or less.

5.10.3. Over congested areas (cities, towns, settlements) or groups of people if the altitude does not ensure at least 1,000 ft. above the highest obstacle within a 2,000-ft. radius of the aircraft.

5.10.4. Over noncongested areas at an altitude of less than 500 ft. above the surface except over open water, in MTRs, or in sparsely populated areas. Under such exceptions, pilots must not operate aircraft closer than 500 ft. to any person, vessel, vehicle, or structure.

- The FAA requests pilots maintain a minimum of 2,000 ft. above the terrain of the following areas: national parks, monuments, seashores, lake shores, recreation areas, and scenic riverways administered by the National Park Service; national wildlife refuges, big game refuges, game ranges, and wildlife refuges administered by the US Fish and Wildlife Service; and wilderness and primitive areas administered by the US Forest Service. This restriction is not applicable to special-use airspace, low-altitude tactical navigation areas, and MTRs. Higher altitudes may exist for specific areas. (See AP/1B and sectional aeronautical charts.)

- Helicopters or aircraft used to conduct approved aircraft flight tests may operate at lower altitudes than the minimums in paragraph 5.10.3 and paragraph 5.10.4 above if they do not create a hazard to persons or property on the surface. During test, acceptance, or research flights conducted below 1,500 ft. AGL, single engine helicopters must remain within autorotation distance of a clear area.

5.10.4. (AFRES) Altitude restrictions are waived for C-130 aircraft operating on aerial spray missions. Provisions cited in HQ AFFSA/XOF letter, 2 Feb 95, waiver to AFI 11-206, paragraph 5.10 for Aerial Spray Missions, apply. This waiver expires 30 Jan 00.

5.10.5. Within a designated disaster area. NOTAMS list disaster areas. Exceptions are permitted when an aircraft is:

- Aiding in airborne relief for the area.

- Going to or from an airport in the area, but does not hamper or endanger relief activities.

- On a flight that has been specifically cleared by ATC.

5.11. Low Altitude Operations. Fixed-wing aircraft flying point to point above 250 KIAS below 10,000 ft. MSL must adhere to paragraph 5.7.

(AFRES) See AFI 13-201/AFRES supplement for additional procedures concerning low altitude operations and establishment of military training routes.

5.12. Altimeter Settings. Pilots must set altimeters according to FLIP General Planning and Area Planning documents. Use radar altimeters according to paragraph 8.14.3., aircraft T.O.s, MAJCOM directives, or supplements to this instruction.

5.13. Simulated Instrument Flight:

5.13.1. When not using vision-restricting devices, pilots may fly or log simulated instrument flight with MAJCOM approval (see AFI 11-401). MAJCOMs must ensure:

- The aircraft is equipped with a functional two-way radio.

- A safety observer with a current aeronautical rating (able to see outside at all times) accompanies the flight, either as a crew member or in a chase aircraft. If a chase aircraft is used, maintain continuous visual contact and two-way communications between aircraft. MAJCOMs will set observer qualifications.

(AFRES) Simulated instrument approaches may be logged in aircraft under the operational control of AFRES without the use of vision-restricting devices. Safety observer qualifications will be according to gaining command directives.

5.13.2. When a vision-restricting device is used, the minimum altitudes set by the MAJCOM must provide at least 2,000 ft. of obstruction clearance if the observer:

- Is not qualified as first pilot or copilot in the aircraft.

- Does not have full view of the flight instruments.

- Does not have access to the flight controls.

- Is in a chase aircraft.

5.13.3. Pilots will not practice takeoffs or landings using vision-restricting devices unless the MAJCOM approves the procedure for special instrument training.

5.13.4. Pilots will conduct simulated instrument approaches according to Chapter 8.

5.14. Simulated Emergency Flight Procedures:

5.14.1. Pilots must not practice emergency procedures when passengers are on board the aircraft.

5.14.2. For simulated emergencies, single pilot aircraft require day VFR weather conditions. In Alaska and other areas exceeding 60 latitude, MAJCOMs may authorize simulated emergencies during the period of civil twilight.

(AFRES) Within AFRES, accomplish simulated emergency flight procedures in strict compliance with this supplement and multi/gaining command instructions, supplements and directives.

5.14.3. MAJCOMs may allow simulated emergencies for multi-pilot aircraft in day IMC if weather conditions are at or above published circling minimums for the approach flown. MAJCOMs may allow night simulated emergencies if the weather is at or above a 1000-ft. ceiling and 2 SMs visibility or circling minimums, whichever is higher.

5.14.4. MAJCOMs must publish guidance for practicing simulated emergency takeoffs, approaches, and landings. This guidance must include, as a minimum:

5.14.4.1. Weather requirements at night and in IMC if other than in paragraph 5.14.3. above.

5.14.4.2. Procedures when an instructor pilot or flight examiner does not have immediate access to the aircraft controls.

5.14.4.3. Instructions to minimize actual engine shutdown when a reduction of power suffices.

5.14.4.4. Restrictions on the practices of simulated flameout (SFO) or forced landing approaches unless:

- Aircraft T.O.s furnish specific guidance for performing SFO or forced landing approaches.
- Those approaches conform to T.O. patterns.
- The preflight briefing contains SFO procedures.
- Pilots fly the approaches at military airfields or at P fields where letters of agreement are in effect. Also, the airport must have an active tower or runway supervisory unit (RSU), enough runway for that aircraft, and proper crash and rescue equipment.
- The practice approaches are coordinated with ATC agencies responsible for the airspace that the SFO or forced landing pattern transits.

5.14.4.5. (Added)(AFRES) To minimize the possibility of accidents or injuries, all pilots assigned or attached to AFRES will ensure that:

5.14.4.5.1. (Added)(AFRES) All crewmembers on board the aircraft are alerted before demonstration of aircraft flight characteristics or practicing simulated emergency flight procedures.

5.14.4.5.2. (Added)(AFRES) Simulated emergencies are given separately and never compounded during flight.

5.14.4.5.3. (Added)(AFRES) Simulated emergencies are practiced at home station, designated training bases approved by NAFs, and active military installations.

5.14.4.5.4. (Added)(AFRES) Simulated emergency procedures are terminated immediately if an actual emergency condition arises.

5.14.4.5.5. (Added)(AFRES) The training flight is terminated any time adverse weather or runway surface conditions are encountered that could reduce maximum safety factors.

5.14.4.5.6. (Added)(AFRES) FCF autorotations are initiated within glide distance of a suitable landing area and are made to a hard surface runway or taxiway if power recovery is to be initiated below 500 feet AGL. Never practice autorotations over open water or to areas covered by loose dust, snow, or sand.

5.14.4.5.7. (Added)(AFRES) Keep actual engine shutdowns to a minimum and accomplished only when authorized by applicable gaining command directives.

5.15. Airborne Radar Approaches (ARA). These are special procedures to be used by aircraft with airborne radar systems and authorized by each MAJCOM in appropriate instructions.

5.16. Touch-and-Go Landings:

5.16.1. Commanders must ensure pilots conduct touch-and-go landings only for essential training, evaluation, or mission accomplishment. This limitation does not apply to touch-and-go landings required by courses in AFCAT 36-2223.

5.16.2. A MAJCOM may authorize touch-and-go landings in any command-operated aircraft if the mission dictates, but must give explicit guidance in its command supplement about operating conditions and pilot qualifications.

5.17. Parachuting or Dropping Objects. Except in an emergency or when specifically directed to do so, the pilot in command must not allow any parachutist or object to be dropped from an aircraft. The approving agency must ensure the dropping of a parachutist or object does not create a hazard to persons, property, or other air traffic. The Aircrew will:

- Make authorized parachute drops using the procedures specified in FAR, Part 105.
- When authorized, jettison fuel after notifying the appropriate ATC or flight service facility of intentions, altitude, and location and when the operation is complete.
- When authorized, drop chaff containing rope elements according to AFR 55-34, and FAA Handbook 7610.4.
- Report any accidental loss of equipment or aircraft parts or jettisoning of cargo according to AFIs 10-206 and 91-402.

NOTE: For the purposes of this section, FAR, Part 105 applies to the dropping of both parachutists and objects from Air Force aircraft.

5.18. Aircraft Lighting:

5.18.1. Aircraft must display lighted standard position lights (if installed):

- Immediately before engine start and when an engine is running. Aircraft that do not have power available before start are exempt until after engine start and transfer to internal power. As a rule, position lights are steady when displayed with the anti-collision lights; they are flashing at other times.
- Between the hours of official sunset and official sunrise when parked in an area likely to create a hazard or while being towed, unless clearly illuminated by an outside source.

5.18.2. Anti-collision or strobe lights must be on from takeoff to landing on all flights, unless reflections cause pilot distractions in instrument meteorological conditions.

5.18.3. Except when detrimental to flight safety, the pilot must display landing or taxi lights:

- On final approach (day or night) when not in direct continuous contact with the tower or RSU. MAJCOMs may determine landing or taxi light use for helicopter approaches into remote sites and uncontrolled airspace.
- At all times recommended by the T.O. or Dash 1 or requested by the appropriate controlling agency.

5.18.4. When operating below 10,000 ft. MSL, pilots must illuminate all external lights (day or night) within operational constraints.

5.18.5. Amphibious craft at anchor must display anchor lights, unless located in an area where vessels do not require anchor lights.

NOTE 1: Special-use lights, such as aircraft-installed ground floodlights and helicopter search spotlights, may be left off at the pilot's discretion.

NOTE 2: To the extent necessary for safety, formation flights may vary lighting configuration according to the aircraft type and mission requirement. The unit exercising operational control of the aircraft establishes further guidance not contained in operational procedures or T.O.s, but that guidance must ensure adequate visual identification of the entire formation.

NOTE 3: MAJCOMs may prescribe the use of anti-collision, strobe lights, and position lights when flying in restricted areas and warning areas.

5.19. Aerobatics and Air Combat Tactics. Pilots must perform aerobatics and air combat tactics in special-use airspace, ATC-assigned airspace (ATCAA) or military training routes (MTR's) according to the guidelines in AFI 11-214.

5.20. Participating in Aerial Events. AFI 11-209 governs Air Force participation in aerial events and demonstrations as well as static displays.

5.21. Smoking on Air Force Aircraft. AFI 40-102 governs smoking on Air Force aircraft. In addition to these restrictions, you will not smoke:

- If directed by the pilot in command.
- During any ground or hover operation.
- Immediately after takeoff and before landing.
- By crew members if oxygen requirement is "O" or oxygen must be immediately available, except when the crew member is using a quick-don type of mask (see table 6.1).

- In any fuselage section containing fuel.
- During air-to-air refueling, fuel dumping operations, or when fuel fumes are present.

5.22. Landing With Hot Armament. When an aircraft carries live armament stores, local units must develop procedures unique to the unit mission to ensure full safety in all aircraft recovery procedures and ground operations.

5.22.1. Before landing with hot armament or practice munitions at an airfield where local procedures are not known, the pilot must:

- Advise the tower of the circumstances.
- Advise transient alert and other appropriate agencies.
- Request taxi instructions to the designated de-arming area.

5.22.2. After landing with hot armament at a non Air Force installation or an airport without taxi instructions or knowledge of local procedures, the pilot must:

- Avoid taxing into an area or position that could threaten personnel or equipment.
- Before leaving the aircraft, ensure the ground crew is aware of the armament stores on board.
- If necessary, request assistance from the nearest Air Force facility by the most expeditious means.

NOTE: This paragraph does not relieve the pilot of responsibilities outlined in AFI 11-204.

5.23. Pilot Weather Reports (PIREP) and Air Reports (AIREP):

5.23.1. PIREPS. Pilots immediately will report hazardous weather conditions and volcanic activity to the ARTCC, terminal ATC, or FSS. Also, pilots are urged to report any significant flight condition information. Follow with a report to a pilot-to-metro service (PMSV) to ensure rapid dissemination to other using agencies. See PIREP procedures in the Flight Information Handbook.

5.23.2. AIREPS. AIREPs are usually made over areas where weather information is limited or nonexistent (for example, over an ocean). AIREPs also contain supplemental aircraft position information. MAJCOMs provide aircrews guidance on when to file an AIREP. When required, use AF Form 72, **Air Report (AIREP)**, for reporting. The pilot must brief the forecaster at the destination airfield on the weather conditions that prompted AIREPs and pass on any other significant weather information.

5.24. Operating in the Vicinity of Thunderstorms. Except for a MAJCOM-approved mission requiring planned penetration of thunderstorms, there is no peacetime mission requiring such penetration. Pilots must use the following procedures for flights near a thunderstorm:

(AFRES) WC-130 aircrews operating on Volant Eye/Volant Coast missions will comply with command directives when penetration of severe weather is planned.

5.24.1. Do not take off, land, or fly an approach at an airport if thunderstorms are producing hazardous conditions such as hail, strong winds, gust fronts, heavy rain, lightning, wind shear, and (or) microbursts.

5.24.2. When observed or reported thunderstorm activity adversely affects the flight plan route, delay the scheduled mission, alter the route of flight to avoid the thunderstorm activity, or proceed to a suitable alternate. Use all available information including radar, PMSV, and PIREPs to avoid thunderstorm activity.

NOTE: Lightning strikes and electrostatic discharges can occur in what may look like benign conditions; a thunderstorm does not have to be present for these discharges. See AFH 11-203 for further information on thunderstorms and lightning.

5.25. Wake Turbulence and Wind Shear. Pilots should:

5.25.1. Notify ATC when encountering wake turbulence or wind shear on any approach. Attain greater separation by making adjustments or follow ATC instructions.

5.25.2. Report a wind shear or microburst encounter on takeoff or landing to the most appropriate agency (control tower, approach control, PMSV) and, if possible, include:

- Altitude of the encounter.
- Loss or gain in airspeed or altitude.
- Type of aircraft.
- Location of occurrence (see AFH 11-203).

5.26. Operating in the Vicinity of Volcanic Activity. MAJCOMs will provide specific guidance for aircraft operating in the vicinity of known or reported volcanic activity.

5.27. Night Vision Goggles (NVG) Operations. Aircrews will preflight NVGs prior to each use to ensure proper operation and optimum night visual enhancement.

MAJCOM commanders and ANGRC/CC will prescribe the use of NVGs during aircraft operations.

Chapter 6

LIFE SUPPORT SYSTEMS

6.1. General Information:

6.1.1. Commanders of flying units must ensure that nonrated personnel and civilians who make regular and frequent flights receive an indoctrination course on emergency procedures and the proper use of emergency equipment. These courses must address mission and aircraft-specific equipment and procedures.

NOTE: An aircraft commander's preflight briefing is not an indoctrination course.

(AFRES) USAFR unit's life support sections will provide aircrew life support and survival training according to AFR 55-27/AFRES Supplement 1 (AFI 11-301/AFRES Supplement).

6.1.2. The aircraft commander or a designated representative is responsible for briefing each passenger before flight. The briefing must include:

- Location and use of emergency exits.
- Location and use of parachutes and associated equipment.
- Operation of emergency signals and passenger evacuation.
- Use of the oxygen system.

6.2. Personal and Survival Equipment. MAJCOMs and ANG prescribe wear and use of the following equipment in conjunction with minimum standards established in relevant aircraft T.O.s:

- Parachutes.
- Seat belts, harnesses, or safety belts.
- Personal equipment, including helmets, anti-G suits, flight clothing, and flight gloves.
- Aircraft survival kits and optional components.
- Individual survival equipment, including survival vests and anti-exposure suits.
- Flotation equipment, including rafts and life preservers.
- Pressure suits above flight level (FL) 500. (MAJCOMs and ANG establish specific time and altitude limits and recovery procedures.)

6.3. Spectacles, Contact Lenses, and Night Vision Goggles (NVG):

6.3.1. While performing Aircrew duties, crew members must use only those spectacles fabricated by military optical fabrication laboratories or commercial spectacles approved by HQ AFMOA/SGPA. Each local eye care clinic will maintain details regarding these specifications.

6.3.2. Crew members who want to wear contact lenses must consult with their unit flight surgeon and meet criteria and follow guidelines outlined in the USAF Contact Lens Implementation Plan.

6.3.3. Crew members who wear corrective spectacles or contact lenses must carry a spare set of clear prescription spectacles on their person while performing Aircrew duties.

6.3.4. Crew members must undergo an initial certification course, emphasizing preflight procedures and goggle optimization and limitations, prior to their initial flight with NVGs. An appropriately trained instructor, assisted by a flight surgeon or a designated representative, will conduct this course (see AFI 48-123).

6.4. Oxygen Requirements. When the cabin altitude exceeds 10,000 ft., each crew member of an Air Force aircraft must use supplemental oxygen.

NOTE: Due to possible clogging of the inhalation and exhalation valve, facial medications and makeup should not be used with supplemental oxygen and oxygen equipment.

6.4.1. Unpressurized Aircraft Procedures:

- If occupants do not have oxygen, pilots will not operate an aircraft between 10,000 and 13,000 ft. MSL for longer than 3 hours and will not exceed 13,000 ft. MSL.
- If oxygen is available to all occupants, pilots may conduct flights up to FL 250.

6.4.2. Pressurized Aircraft Procedures. When a pilot flies an aircraft above 10,000 ft. MSL, but maintains its cabin altitude at 10,000 ft. or less, use the oxygen equipment outlined in table 6.1.

NOTE: Sufficient oxygen must be aboard the aircraft before takeoff to fly the planned mission. MAJCOMs may establish more restrictive procedures for using oxygen during ground or flight operations of tactical aircraft or jet trainers.

6.4.3. Procedures for Loss of Cabin Pressure:

- If the aircraft loses cabin pressure, the pilot must initiate an immediate descent to the lowest practical altitude, preferably below 18,000 ft., but in no case allow cabin altitude to remain above 25,000 ft. unless occupants are wearing functional pressure suits.

- If the aircraft loses pressure and any occupant lacks functioning oxygen equipment, the pilot must descend to maintain a cabin altitude of 13,000 ft. or less and comply with paragraph 6.4.1. above.

- When cabin altitude exceeds 18,000 ft. MSL, the pilot must notify the flight safety office of any unintentional loss of cabin pressure.

- If an individual appears to be suffering decompression sickness, a crew member should administer 100 percent oxygen to that individual. The pilot must descend as soon as practical and land at the nearest suitable installation where medical assistance can be obtained. Before the affected person may continue the flight, consult a flight surgeon or civilian aeromedical examiner. Decompression sickness may occur up to 12 hours after mission completion.

Table 6.1. Oxygen Requirements For Pressurized Aircraft.

ITEM	A	B	C	D
	Ambient Altitude in ft.	**Pilot**	**Pilot (see note)**	**Occupant**
1	10,000 ft. through FL 250	R	R	NA
2	Above FL 250 through FL 350	I	R	R
3	Above FL 350 through FL 410 (both pilots in seat)	I	I	R
4	Above FL 350 through FL 410 (only one pilot in seat)	O	R	R
5	Above FL 410 through FL 450	O	I	R
6	Above FL 450 through FL 500	O	I	I
7	Above FL 500	P	P	P

NOTE: These requirements apply to the second pilot in multiplace aircraft. They also apply to nonpilot crew members occupying crew positions with direct access to flight controls.

LEGEND:
I - Have oxygen immediately available. Wear helmets with the oxygen mask attached to one side, or an approved quick-donning, or a sweep-on mask properly adjusted and positioned within arm's reach for immediate use. Set oxygen regulator to 100 percent and ON.
O - Oxygen mask ON. Regulator ON and normal.
P - Wear a pressure suit.
R - Have oxygen readily available. A functioning system and mask must be located within arm's reach, and the regulator must be set to 100 percent and ON (if the system contains an operator adjustable regulator).

Chapter 7

VISUAL FLIGHT RULES (VFR)

7.1. General Information. Pilots should fly fixed-wing aircraft under VFR only when VFR operation is necessary to complete that specific mission. If the mission requires VFR operation, the pilot must remember that the weather criteria for VFR are minimums. In fact, the pilot should allow a greater margin of safety than these minimums (especially in a terminal area or when poor visibility makes VFR flight questionable). If the weather prevents continued flight under VFR on the planned route:

- Alter the route of flight so as to continue VFR.
- Maintain VFR until filing an IFR flight plan and obtaining an IFR clearance.
- Maintain VFR and land.

(AFRES) When flying under visual flight rules (VFR) flight following, radar advisories, and/or traffic information will be requested whenever available.

7.2. Filing VFR Flight Plans. Pilots may file VFR flight plans if:

- Destination weather or point of changeover on a composite flight plan (a flight conducted according to both VFR and IFR) is forecasted to have a ceiling equal to, or greater than, 1500 ft. and a visibility of at least 3 SMs from l hour before until l hour after (± 1 hour) estimated time of arrival (ETA).
- Forecasted weather permits flight according to table 7.1.

EXCEPTION: Helicopter pilots may file to destinations forecasted to have less than the conditions specified above, if sufficient usable fuel is aboard to comply with paragraph 7.1.

7.3. Flight Operations Under VFR. Pilots:

7.3.1. May not conduct flights under VFR within a Class B, C, D, and E airspace unless the following conditions exist:

- The ceiling is equal to or greater than 1500 ft.
- The reported prevailing visibility is at least 3 SMs during takeoff and landing; or, if prevailing visibility is not reported, flight visibility during takeoff and landing is at least 3 SMs.
- The flight visibility and separation from clouds are equal to or greater than the requirements in table 7.1.

7.3.2. May conduct flights according to VFR in Class G airspace if the flight visibility and separation from clouds are equal to or greater than the requirements in table 7.1.

EXCEPTION: Helicopter pilots may operate under VFR within a Class B, C, D, and E airspace when the ceiling is at or above 1000 ft. and visibility is 3 SMs or more. Helicopter pilots may file for special VFR if they cannot meet the above weather minimums. They must obtain an ATC clearance and conduct the flight clear of clouds at a speed that allows adequate opportunity to see and avoid air traffic or obstructions.

7.3.3. May operate helicopters under VFR within federal airways up to 500 ft. below the minimum en route altitude (MEA) or the minimum obstruction clearance altitude (MOCA), whichever is lower.

Table 7.1. VFR Cloud Clearance and Visibility Minimums (See Note).

ITEM	A	B	C
	Airspace	**Prevailing or Flight Visibility**	**Distance From Cloud**
1	Class A	Not Applicable	Not Applicable
2	Class B	3 SMs	Clear of Clouds

Table 7.1. VFR Cloud Clearance and Visibility Minimums (See Note).

ITEM	A Airspace	B Prevailing or Flight Visibility	C Distance From Cloud
3	Class C and Class D	3 SMs	500 ft. below, 1,000 ft. above, and 2,000 ft. horizontal
4	Class E Below 10,000 ft. MSL	3 SMs	500 ft. below, 1,000 ft. above, and 2,000 ft. horizontal
5	Class E At or above 10,000 ft. MSL	5 SMs	1,000 ft. below, 1,000 ft. above, and 1 SM horizontal
6	Class G At or below 1,200 ft. AGL (Except NOTE)	Day: 1 SM	Clear of Clouds
7		Night: 3 SMs	500 ft. below, 1,000 ft. above, and 2,000 ft. horizontal
8	Class G Above 1,200 ft. AGL, but less than 10,000 ft. MSL	Day: 1 SM	
9		Night: 3 SMs	
10	Class G More than 1,200 ft. AGL, and at or above 10,000 ft. MSL	5 SMs	1,000 ft. below, 1,000 ft. above, and 1 SM horizontal

NOTE: Pilots may conduct helicopter operations in Class G airspace below 1200 ft. above the surface clear of clouds at a speed that allows the pilot adequate opportunity to avoid collision with air traffic or obstructions.

Chapter 8

INSTRUMENT FLIGHT RULES (FR)

8.1. General Information. Pilots should conduct Air Force flights under IFR to the maximum extent possible without unacceptable mission degradation. Pilots operating in visual conditions according to IFR should be aware that they are in a "see and avoid" environment. ATC only provides separation between IFR and participating VFR aircraft operating within controlled airspace. Standard IFR separation is provided to all aircraft operating under IFR in controlled airspace. Whether operating under VFR or IFR, pilots must remain within assigned airspace and altitudes.

8.2. IFR Requirements. Pilots must fly according to IFR if:

- Weather conditions do not permit flight according to VFR.
- Operating in Class A airspace as depicted in FLIP.
- Operating within federal airways. (For helicopters, see paragraph 7.3.3.) ***NOTE:*** Do not consider crossing airway boundaries as "within" airways. When you must conduct volume training along or through airways, make prior arrangements with the appropriate ATC agency.
- Performing instrument approaches in a fixed-wing aircraft. ***NOTE:*** If practical, helicopter pilots should conduct instrument approaches according to IFR. If volume VFR instrument approach training for helicopters is necessary, flying units should coordinate the procedures with the local ATC facility.
- Operating on point-to-point flights in fixed-wing aircraft where the primary purpose is training, logistics, or administrative

support. ***NOTE:*** If the destination has no terminal instrument-approach capability, file a composite IFR/VFR flight plan.

- Operating between the hours of official sunset and official sunrise, unless that specific mission cannot be made under IFR. Helicopter pilots must comply if practical.

8.3. ATC Clearance. Pilots must file each planned IFR flight according to the flight plan requirements in this instruction and FLIP. Pilots must obtain an ATC clearance before commencing any IFR flight that originates in or penetrates controlled airspace.

8.4. Destination Requirements for Filing Purposes. The following criteria governs flight conducted according to IFR:

8.4.1. Published Instrument Approach. An operational facility, with a published instrument approach capable of being flown with navigational equipment aboard the aircraft, must serve the destination. A current copy of the appropriate FLIP en route supplement, en route charts, Flight Information Handbook, and appropriate approach procedures must be aboard each aircraft. A published approach is:

- Any DoD or National Oceanic Atmospheric Administration (NOAA) FLIP procedure.

- A local use procedure developed according to AFI 13-209 and approved by the host MAJCOM.

- A published radar approach. For pilots to fly a published radar approach or instrument approach procedure that requires radar to define a fix essential for flying the approach, a nonradar facility must provide a positive aircraft position within 25 NMs of the airfield. Pilots operating in Class A airspace may file to the nearest nonradar facility or fix (regardless of distance from the terminal) and request radar vector service to the terminal.

- Any product not published in a DoD or NOAA FLIP document, but approved by the MAJCOM for which an operational requirement exists. The MAJCOM Terminal Instrument Procedures (TERPS) office must review the product before MAJCOM grants approval. The MAJCOM TERPS office shall inform aircrews when a product does not meet recognized obstruction clearance and (or) flight inspection criteria.

8.4.2. No Published Approach. Pilots may file IFR to a point en route (where forecast weather is VFR at the time of arrival) or to a point served by a published approach procedure (where the pilot can make a descent to VFR conditions) and then continue under VFR to the destination.

8.4.3. Weather:

8.4.3.1. Fixed-Wing Aircraft. Weather for the ETA (±1 hour) at destination or recovery base must be at or above the lowest minimum published for an approach suitable for the aircraft concerned. For a straight-in or sidestep approach, the forecast weather must meet only the published visibility requirements for that approach. For a circling approach, the forecast weather must meet both the ceiling and visibility requirements.

NOTE: MAJCOMs may waive this requirement when operational necessity dictates the use of a destination forecast to be below minimums, but MAJCOMs must establish alternate recovery procedures, such as the use of two or more alternate airports, additional holding fuel, etc.

8.4.3.2. Helicopters. The requirements in paragraph 8.4.3.1. above apply with the following exceptions:

- Helicopter pilots planning a fixed-wing approach procedure may use the Category A minimum descent altitude (MDA) or decision height (DH), regardless of airspeed flown. The required visibility minimum may be reduced to one-half of the published visibility minimums for Category A aircraft, but in no case may the minimums be reduced to less than 1/4 SM or 1200 ft. runway visual range (RVR).

- Helicopter pilots must use the published visibility minimums for "copter only" approaches as published.

NOTE: For both fixed-wing aircraft and helicopters, forecasts for temporary (TEMPO) changes in ceiling and visibility are not restrictive for destination filing purposes, but they may require an alternate to be filed (see paragraph 8.5 and paragraph 8.6).

8.5. Designating an Alternate Airport. Regardless of weather, pilots must designate an alternate airport on all IFR flight plans when filing to a destination requiring radar to fly the planned approach. Pilots must also designate an alternate airport as follows for:

8.5.1. Fixed-wing aircraft if, for the ETA (±1 hour) for the first point of intended landing (or each point of intended landing on a stopover flight plan), the worst weather (temporary (TEMPO) or prevailing) is forecast to be less than:

- A ceiling of 3,000 ft., or

- A visibility of 3 SMs or 2 SMs more than the lowest compatible published landing minimum visibility, whichever is greater (see figure 8.1).

8.5.2. Helicopters if, for the ETA (±1 hour), the worst weather (temporary or prevailing) is forecast to be less than a ceiling of 700 ft. or visibility of less than 1 SM (see figure 8.2).

EXCEPTION: When a pilot must use a remote or island destination for which the pilot cannot designate an alternate airport, the MAJCOM may authorize holding for a specified time period. In that case, the MAJCOM must set up weather criteria and recovery procedures to ensure flight safety.

NOTE: Do not specify an airport as an alternate if the navigational aid (NAVAID) required to fly the approach is unmonitored due to the doubtful reliability of the facility or the unavailability of weather reporting service. This is indicated by A NA in FLIP and applies to USAF pilots.

8.6. Alternate Airport Weather Requirements for Filing Purposes. For an airport to qualify as an alternate, the worst weather (temporary or prevailing) for the ETA (±1 hour) at the alternate airport must be forecast to be at or above the following:

8.6.1. With a Published Approach Procedure:

- For fixed-wing aircraft, a ceiling of at least 1,000 ft. or 500 ft. above the lowest compatible published landing minimum, whichever is higher, and a visibility of 2 SMs or 1 SM above the lowest compatible published landing minimum, whichever is higher (see figure 8.1).

- For helicopters, a ceiling of at least 700 ft. or 500 ft. above the lowest compatible published landing minimum, whichever is higher, and a visibility of 1 SM or ½ SM above the lowest compatible published landing minimum, whichever is higher (see figure 8.2).

8.6.2. Without a Published Approach Procedure. Forecast weather for the ETA (±1 hour) must permit a VFR descent from the IFR MEA/MOCA and a VFR approach and landing (see figure 8.1).

NOTE: A pilot may name an airport as an alternate even though its forecast includes temporary weather conditions due to thunderstorms, rain showers, or snow showers that are lower than those set forth in paragraph 8.6.1. and paragraph 8.6.2. above, but that pilot must obtain a thorough weather briefing when there is the possibility of such weather. In all cases, the forecast for the prevailing weather conditions must meet or exceed the requirements in paragraph 8.6.1. and paragraph 8.6.2. above. (See paragraph 5.24. for cautions on operating in the vicinity of thunderstorms.)

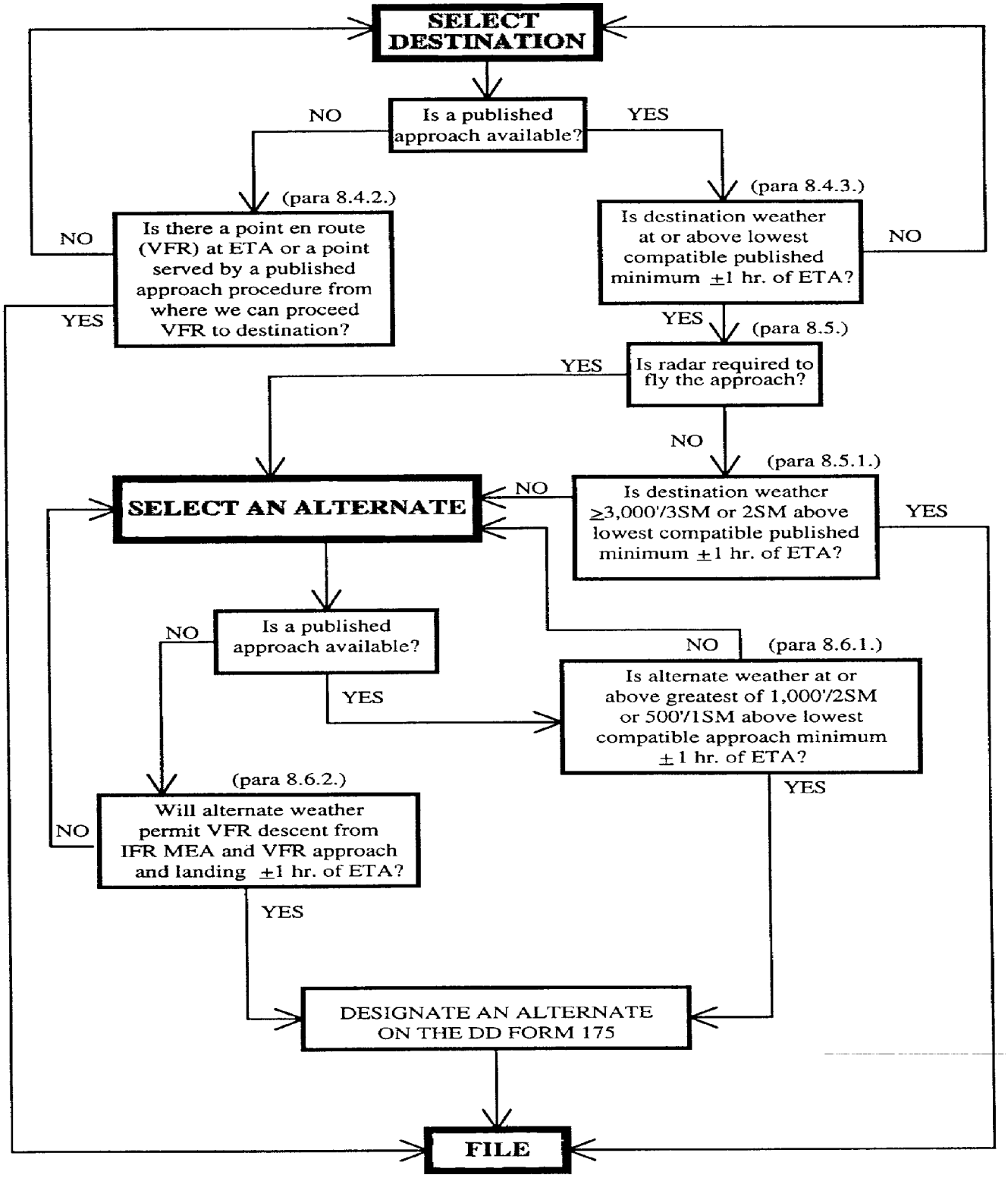

Figure 8.1. Fixed-Wing Weather (WX) Requirements.

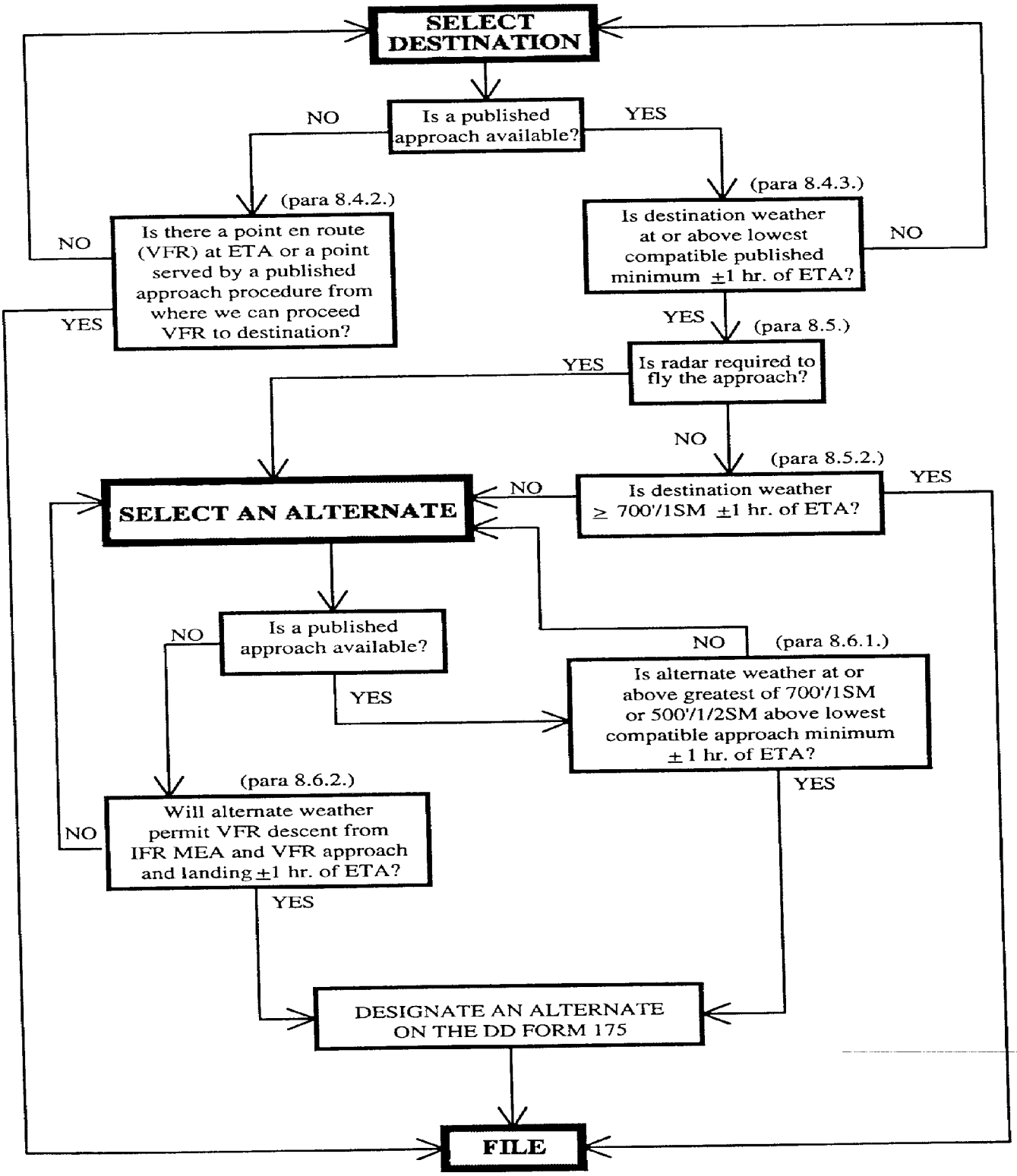

Figure 8.2. Helicopter Weather (WX) Requirements.

8.7. Directed Use of an Alternate Airport:

8.7.1. Flying unit commanders or a designated representative may direct a pilot to proceed to an alternate airport if circumstances warrant.

NOTE: When commanders contemplate this action, they should consider pilot preference for holding instead of proceeding to an alternate airport and provide information to assist the pilot.

8.7.2. Other responsible individuals may only suggest a pilot proceed to an alternate airport if hazardous weather conditions warrant.

8.8. Takeoff Minimums. Pilots must not take off unless the existing weather is at or above the minimum prescribed by the MAJCOM to which the pilot is assigned or attached for flying.

8.8.1. In the absence of MAJCOM-established takeoff minimums, pilots may not take off when existing weather is below landing minimums for the specific aircraft.

8.8.2. MAJCOMs that permit takeoffs when existing weather is lower than the published landing minimums for the base of departure must develop substitute recovery procedures.

(AFRES) AFRES aircrews will use established gaining command recovery procedures when departing a base with existing weather below landing minimums.

8.8.3. When MAJCOM-established minimums are lower than in paragraph 8.8.1. above, all takeoffs must be radar monitored if such services are available. ***NOTE:*** Takeoff minimums for civil contract carriers operating from airports under Air Force jurisdiction are those approved by the FAA and published in the air carrier's operations specifications.

8.8.4. Published instrument departure procedures or standard instrument departures may include both takeoff minimums and climb gradients for the specific departure. The takeoff minimums specified for these procedures do not apply to Air Force pilots. To ensure adequate obstacle clearance during departure, Air Force aircraft must be capable of achieving or exceeding the published climb gradient.

8.9. Minimum Altitudes. The published MEA or MOCA governs IFR operations on airways or advisory routes. The MEA or MOCA is designated only for published routes. On direct flights within the US where MEA or MOCA is not published, pilots must fly aircraft at least 1,000 ft. (2,000 ft. in mountainous terrain as depicted in FLIP AP/1) above the highest obstacle within 5 NMs either side of the planned route centerline. Outside the US, where no minimum altitude is established, aircraft shall maintain a minimum of 1000 ft. above the highest terrain within 5 NMs of the estimated position of the aircraft. In mountainous areas, the minimum altitude will be 2000 ft. above the highest terrain within 10 NMs of the estimated position of the aircraft. In areas outside the US and Canada, MAJCOMs will designate mountainous areas not otherwise defined by the foreign nation and ensure FLIP depicts the terrain so designated. Mountainous areas include all terrain at or above 3,000 ft. MSL. Charts published in FLIP must include a notation of this criteria.

8.9.1. Minimum altitudes for IFR operations within published MTRs in US sovereign airspace are in FLIP AP/1B.

8.9.2. When the Air Force conducts flight operations at the MOCA in FAA-controlled airspace, navigation course guidance is not assured at the minimum safe altitudes within the defined sectors. The usable range of the NAVAID may only extend to 22 NMs.

8.10. IFR Cruising Altitudes:

8.10.1. Pilots file requested altitudes for IFR flights in controlled airspace according to the cruising altitude diagram depicted in FLIP, but ATC assigns the actual altitudes to fly.

8.10.2. In uncontrolled airspace, pilots must maintain appropriate IFR altitudes as depicted in FLIP, except while turning or established in a holding pattern of 2 minutes or less. In uncontrolled airspace, the pilot is solely responsible for traffic separation and obstruction clearance.

8.11. IFR En Route Navigation. Unless authorized by the controlling agency, pilots operating in controlled airspace under IFR on all routes, published or unpublished, must fly along a direct course between NAVAIDs or fixes defining the route.

NOTE: This paragraph does not apply to operations in special-use airspace or on MTRs.

8.12. In-Flight Communications:

8.12.1. Position Reports. A pilot operating under IFR must continuously monitor appropriate ATC frequencies and follow FLIP instructions on position reports, lost communications, and radio procedures.

8.12.2. Navigation and Communication Equipment Malfunctions. When operating in controlled airspace under IFR, the pilot in command must immediately report to ATC the loss or impairment of navigational or air-to-ground communications capability according to FLIP instructions.

8.13. Cancellation or Change of IFR Clearance. Except as otherwise restricted in this instruction, a pilot may cancel an IFR clearance if existing and forecast weather and

NOTAM information permits safe continuation of the flight under VFR. If an IFR clearance is canceled, pilots must notify flight service (to ensure there is flight-following for the VFR portion of the flight) or establish radio contact with the destination tower. See FLIP en route supplements for information on flight plan changes and the reporting format.

(AFRES) IFR flight plans are not canceled when weather is unknown, reported as marginal, or when scud, haze, or other restrictions to visibility are present.

8.14. Approach and Landing Minimums:

8.14.1. Pilots may start a published straight-in or sidestep approach or an en route descent only if existing weather is reported at or above the visibility minimums published for the intended approach. The reported weather must be at or above the published ceiling and prevailing visibility (PV) minimums for a circling approach. Helicopter pilots planning a fixed-wing approach procedure may use the Category A MDA or DH. The required visibility minimum may be reduced to one-half of the published visibility minimums for Category A aircraft, but in no case may the minimums be reduced to less than 1/4 SM or 1200 ft. RVR.

8.14.2. If a pilot starts the published approach and subsequently determines the weather is below minimums (visibility for straight-in approaches or either ceiling or visibility for circling approaches), the pilot must not deviate from the last ATC clearance until obtaining a new or amended clearance. The pilot may elect to:

- Request clearance to a holding fix or alternate airport as applicable.
- When authorized by the MAJCOM, continue the approach as published to the missed approach point and land, if the aircraft is in a position to make a safe landing and the runway environment (as defined in AFMAN 11-217) is in sight.

8.14.3. The pilot determines minimum approach altitudes (DH or MDA) from the barometric altimeter, except where Category II instrument landing system (ILS) approach procedures depict radar altitudes (RA).

- For a Category II ILS approach with RA depicted, use the radar altimeter to determine minimum approach altitude and use the barometric altimeter as a supporting instrument.
- For all other approaches, MAJCOM supplements direct the use of radar altimeters.

NOTE: Only certified aircrews and aircraft may fly Category II/IIIa ILS approaches.

8.14.4. No person may operate an aircraft below the prescribed MDA or continue an approach below the DH unless:

- The aircraft is in a position to make a normal approach to the runway of intended landing; and
- The pilot clearly sees the approach threshold of the runway, approach lights, or other markings identifiable with the approach end of that runway.

8.14.5. If on arrival at the missed approach point or DH (or at any time thereafter) any of the requirements in paragraph 8.14.4. above are not met, the pilot must immediately execute the appropriate missed approach procedure.

8.15. Determining Visibility Minimums:

8.15.1. Pilots must use Runway Visual Range (RVR), Runway Visibility Value (RVV), or Prevailing Visibility (PV), in that order, to determine if the visibility is at or above the requirement for takeoff or the approach to be flown.

NOTE: A certified weather observer determines the official observation at a particular site. In the event the official RVR is not representative (transmissometer malfunction, unique weather phenomenon, etc.), MAJCOMs may identify an alternate means to determine RVR for aircraft under their operational control.

8.15.2. Published visibility minimums on instrument approach procedure charts are based on full operation of all visual aids associated with the particular approach chart being used. Visibility minimums will be increased by ½ SM for instrument approaches conducted to fields with inoperative approach lighting or as noted on NOTAMs, ATIS, or the approach plate.

8.16. IFR "VFR on Top". MAJCOMs may authorize IFR "VFR on Top" operations if a specific mission requires such clearances.

8.17. Operations Within the Minimum Navigation Performance Specifications (MNPS) Airspace. MAJCOMs may approve the use of navigation equipment that meets the accuracy tolerances of FAA Advisory Circular 120-33. Aircraft meeting the North Atlantic Track Minimum Navigation Performance Specifications (NAT MNPS) requirements meet the Canadian Minimum Navigation Performance Specifications (CMNPS) requirements. MAJCOMs will notify HQ AFFSA of the type aircraft and equipment approved.

8.17.1. NAT MNPS Airspace:

- Pilots operating aircraft in NAT airspace designated as MNPS must comply with requirements specified in FLIP AP/2, chapter 5.

- HQ AFFSA must approve waivers to the requirements of NAT MNPS airspace.

8.17.2. CMNPS Airspace:

- Pilots operating aircraft in CMNPS airspace must comply with the requirements specified in FLIP AP/1, chapter 3.

- HQ AFFSA must approve waivers to the requirements of CMNPS airspace.

DAVID S. SIBLEY, Brig Gen, USAFR
Assistant Vice Commander

GLOSSARY OF REFERENCES, ABBREVIATIONS, ACRONYMS, AND TERMS

Section A-- References

Allied Communication Publication (ACP) 160, US Supplement 1

AFCAT 36-2223 (Formerly AFR 50-5), *US Air Force Formal Schools*

AFH 11-203 (Formerly AFM 51-12), *Weather for Aircrews*

AFI 10-206 (Formerly AFR 55-55), *US Air Force Reporting Instructions*

AFI 10-701 (Formerly AFR 55-44), *Performing Electronic Countermeasures in the United States and Canada*

AFI 11-204 (Formerly AFR 55-14), *Operational Procedures for Aircraft Carrying Hazardous Materials*

AFI 11-207 (Formerly AFR 55-17), *Flight Delivery of Aircraft*

AFI 11-209 (Formerly AFR 60-18), *Air Force Participation in Aerial Events*

AFI 11-214 (Formerly AFR 55-79), *Aircrew and Weapons Director Procedures for Air Operations*

AFI 11-215 (Formerly AFR 60-9), *Flight Manuals Procedures*

AFI 11-218 (Formerly AFR 60-11), *Aircraft Operation and Movement on the Ground*

AFI 13-201 (Formerly AFR 55-2), *US Air Force Airspace Management*

AFI 13-203 (Formerly AFR 60-5), *Air Traffic Control*

AFI 13-207 (Formerly AFR 60-14), *Preventing/Resisting Aircraft Piracy (FOUO)*

AFI 13-208 (Formerly AFR 60-24), *Security Control of Air Traffic and Air Navigation Aids (SCATANA)*

AFI 13-209 (Formerly AFR 60-27), *Instrument Procedure Design and Publication*

AFI 15-114, *Weather Support Evaluation*

AFI 23-206 (Formerly AFR 67-24), *Emergency Procurement of Ground Fuels, Oil, and Other Supplies and Services at Non-DoD Locations*

AFI 24-204 (Formerly AFR 71-4), *Preparing Hazardous Materials for Military Air Shipments*

AFI 36-2212 (Formerly AFR 60-1), *Flight Management*

AFI 37-160, volume 8 (Formerly AFR 9-1), *The Air Force Publications and Forms Management Program--Developing and Processing Forms*

AFI 40-102 (Formerly AFR 30-27), *Smoking in Air Force Facilities*

AFI 44-117 (Formerly AFR 167-3), *Ophthalmic Services*

AFI 48-123 (Formerly AFR 160-43), *Medical Examination and Standards*

AFI 90-301 (Formerly AFR 120-3), *Administrative Inquiries and Investigations*

AFI 91-202 (Formerly AFR 127-3), *Hazardous Air Traffic Report (HATR) Program*

AFI 91-402 (Formerly AFR 127-4), *Investigating and Reporting US Air Force Mishaps*

AFI 91-404 (Formerly AFR 127-2), *The US Air Force Mishap Prevention Program*

AFM 55-9, *Terminal Instrument Procedures (TERPS)*

AFMAN 11-208 (Formerly AFR 55-16), *The US Military Notice to Airmen (NOTAM) System*

AFMAN 11-210 (Formerly AFP 60-19V1,3,4), *Instrument Refresher Course*

AFMAN 11-217 (Formerly AFM 51-37), *Instrument Flying*

AFP 51-45, *Electronic Combat Principles*

AFP 64-5, *Aircrew Survival*

AFP 64-15, *Survival and Emergency Uses of the Parachute*

AFPAM 11-216 (Formerly AFM 51-40), *Air Navigation*

AFPD 11-3 (Formerly AFR 55-27), *Life Support*

AFPD 13-2 (Formerly AFR 55-48), *Air Traffic Control, Airspace, Airfield, and Range Management*

AFR 55-34, *Reducing Flight Disturbances*

NGR (AF) O-2, *National Guard Regulation Air Force Index*

FAA Advisory Circular 90-45A, *Approval of Area Navigation Systems for Use in the U.S. National Airspace System*

FAA Advisory Circular 120-33, *Operational Approval of Airborne Long Range Navigation Systems for Flight Within the NAT-MNPS Airspace*

FAA Handbook 7110.65, *Air Traffic Control*

FAA Handbook 7400.2, *Procedures for Handling Airspace Matters*

FAA Handbook 7610.4, *Special Military Operations*

FAA Handbook 8260.19, *Flight Procedures and Airspace*

FAR Part 91, *General Operating and Flight Rules*

T.O.-00-20-1, *Preventive Maintenance Program, General Policy Requirements and Procedures*

T.O.-00-20-5, *Aircraft, Drone, Aircrew Training Devices, Engines, and Air-Launched Missile Inspections, Flight Reports, and Supporting Documents*

T.O.-00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding (ATOS)*

T.O.-1-IB40, *Weight and Balance Data*

T.O.-1-IB-50, *Basic T.O. for USAF Aircraft Weight and Balance*

T.O. 1-1-300, *Acceptance/Functional Check Flight and Maintenance Operational Checks*

Section B-- Abbreviations and Acronyms

ADIZ	Air Defense Identification Zone
AFFSA	Air Force Flight Standards Agency
AGL	Above Ground Level
AIREP	Air Report
ANG	Air National Guard
AOE	Airport Of Entry
ARA	Airborne Radar Approach
ARCP	Air Refueling Control Point
ARTCC	Air Route Traffic Control Center
ATC	Air Traffic Control
ATIS	Automatic Terminal Information Service
CMNPS	Canadian Minimum Navigation Performance Standards
CONUS	Continental United States
DH	Decision Height
ETA	Estimated Time of Arrival
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FCG	USAF Foreign Clearance Guide
FL	Flight Level
FLIP	Flight Information Publication
FOD	Foreign Object Damage
FSS	Flight Service Station
ft.	Feet
HDD	Head-Down Display
HUD	Head-Up Display
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
KIAS	Knots Indicated Airspeed
LRA	Landing Rights Airport
MAJCOM	Major Command

MDA	Minimum Descent Altitude
MEA	Minimum En Route Altitude
MNPS	Minimum Navigation Performance Specifications
MOA	Military Operations Area
MOCA	Minimum Obstruction Clearance Altitude
MSL	Mean Sea Level
MTR	Military Training Route
NAT	North Atlantic Track
NAVAID	Navigational Aid
NM	Nautical Mile
NOAA	National Oceanic and Atmospheric Administration
NOTAM	Notices to Airmen
NVG	Night Vision Goggle
PIREP	Pilot Report
PMSV	Pilot-to-Metro Service
PV	Prevailing Visibility
RA	Radar Altitude
RNAV	Area Navigation
RSU	Runway Supervisory Unit
RVR	Runway Visual Range
RVV	Runway Visibility Value
SARP	Standards and Recommended Practices
SFO	Simulated Flameout
SM	Statute Mile
TEMPO	Temporary
TERPS	Terminal Instrument Procedures
T.O.	Technical Order
USAFR	United States Air Force Reserve
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
WX	Weather

Section C-- Terms

Aerobatics. Intentionally performed spins, vertical recoveries, and other maneuvers that require pitch and bank angles greater than 90 degrees.

Air Combat Tactics. A general term which includes basic fighter maneuvers, air combat maneuvers, and air combat tactics.

Formation Flight. More than one aircraft which, by prior arrangement between the pilots, operates as a single aircraft with regard to navigation and position reporting. Separation between aircraft within the formation is the responsibility of the flight leader and the pilots of the other aircraft in the flight. This includes transition periods when aircraft within the formation are maneuvering to attain separation from each other to effect individual control and during joinup and breakaway. Such a group is treated for ATC purposes as a single aircraft.

Fuel Reserve. The amount of usable fuel that must be carried on each aircraft, beyond that required to complete the flight as planned.

Instrument Meteorological Conditions. Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling less than the minima specified for visual meteorological conditions.

Minimum Fuel. Indicates that an aircraft's fuel supply has reached a state where, upon reaching the destination, it can accept little or no delay. This is not an emergency situation but merely indicates an emergency situation is possible should any undue delay occur.

Nonstandard Formation. Operating under any of the following conditions:

a. When the flight leader has requested and ATC has approved other than standard formation dimensions.

b. When operating within an authorized altitude reservation (ALTRV) or under the provisions of a letter of agreement.

c. When the operations are conducted in airspace specifically designed for a special activity.

P Airfield. Civil airport wherein permit covers use by transient military aircraft.

Standard Formation. One in which a proximity of no more than 1 NM horizontally and within 100 ft. vertically from the flight leader is maintained by each wing man.

Stopover Flight. A flight where intermediate stops are planned en route to a final destination.

Unmonitored Navigational Aid. A NAVAID must be monitored, for maintenance purposes, by a staffed ATC facility or other agency for it to be considered operational. Unmonitored NAVAIDs listed in the IFR supplement may not be operational and or may provide unreliable navigational information.

Visual Meteorological Conditions (VMC). Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling equal to or better than specified minima.

AIR FORCE AIRCRAFT SPEED AUTHORIZATIONS

A2.1. Minimum Safe Airspeed. The FAA has authorized exceptions to the speed restrictions specified in paragraph 5.7.2. of this instruction. These exceptions are granted to aircraft having flight characteristics that preclude safe operations at speeds below 250 KIAS by providing that if the minimum safe airspeed for any particular operation is greater than the maximum speed prescribed, the aircraft may be operated at the minimum safe speed. These exceptions apply to Air Force aircraft (including ANG and USAFR) operating in US sovereign airspace.

A2.2. Military Operations. Certain military operations and training requirements cannot be met under the terms of FAR 91.117. For example, it is necessary to operate aircraft below 10,000 ft. MSL in excess of 250 KIAS in the accomplishment of air combat maneuver and tactics, low-level navigation, low-level reconnaissance and intercepts, weapons delivery tactics, flight test and evaluation, undergraduate pilot training, actual or simulated alert missions, and other flights of a similar nature.

A2.3. Exceptions. Operations below 10,000 ft. MSL, within US Airspace, in excess of 250 KIAS, in noncompliance with FAR 91.117(a), are authorized for military aircraft (including ANG and USAFR components) only under the following conditions:

A2.3.1. Within restricted areas.

A2.3.2. Within MOAs.

A2.3.3. When operating within large scale exercises or on short-term special missions. (MAJCOMs approve these on an individual basis.) MAJCOMs must ensure information on approved activities is available to the nonparticipating flying public and coordinate these operations with:

- Affected nonparticipating military flying units.
- Affected FAA ARTCCs.
- Affected FAA regions through the Air Force representative.
- Other agencies, as appropriate.

NOTE: Conduct large scale exercises in permanent or temporary special-use airspace established according to FAA Handbooks 7400.2 and 7610.4.

A2.3.4. Within published IFR MTRs.

A2.3.5. Within published VFR MTRs.

A2.3.6. Within defined areas or routes that have been coordinated and concurred on by the proper MAJCOM and FAA regions, but have not yet been published. To accomplish the MAJCOM mission pending publication of the area or route, operations in noncompliance with paragraph 5.7.2. in these areas or routes must be approved by MAJCOMs to accommodate operations on an interim basis.

A2.3.7. When aircraft T.O. or DASH 1 dictate a higher speed. If the T.O. or DASH 1 specifies a range, the aircraft should be operated at the minimum speed in that range. This provision is primarily to accommodate climbs/descents and terminal area operations.